

What is claimed is:

1. A cleaning device for cleaning an orifice surface of an inkjet head and a different level member having a surface at a different level than the orifice surface, the
5 different level member forming a step between the orifice surface and the surface of the different level member, the orifice surface being formed with a row of nozzle orifices, the cleaning device comprising:

an air flow generating unit formed with a suction hole positioned at the nozzle orifice, the air flow generating unit generating a spiraling current by sucking air into the suction hole, the air flow generating unit sucking ink from the nozzle orifice by drawing the ink in with the spiraling current.

15 2. The cleaning device as claimed in claim 1, wherein the air flow generating unit sucks air in through the suction hole at asymmetrical flow velocity and flow rate about the row of nozzle orifices.

20 3. The cleaning device as claimed in claim 1, wherein the air flow generating unit includes:

a suction hole member formed with the suction hole;

a negative pressure generator that generates a negative pressure at the suction hole; and

25 a positioning unit that positions the suction hole member at a suction position wherein the suction hole

confronts the nozzle orifice and the different level member.

4. The cleaning device as claimed in claim 3, wherein
a gap is formed between the suction hole member and at least
one of the orifice surface and the different level member,
5 the gap having a size that is asymmetric about the row of
nozzle orifices.

10 5. The cleaning device as claimed in claim 4, further
comprising a stage unit that moves the suction hole member
following the row of nozzle orifices formed in the orifice
surface.

15 6. The cleaning device as claimed in claim 3, wherein
the suction hole member is formed with a plurality of
suction holes, the negative pressure generator generates the
negative pressure at at least two adjacent ones of the
plurality of suction holes at a time while sequentially
suctioning the plurality of suction holes.

20 7. The cleaning device as claimed in claim 3, wherein
the suction hole member disposed at the suction position
deforms while pressing against the orifice surface and the
different level member without contacting the nozzle orifice.

8. The cleaning device as claimed in claim 3, wherein
the suction hole member disposed at the suction position is
distanced from the orifice surface without contacting the
orifice surface.

25 9. A cleaning device for cleaning an orifice surface

of an inkjet head and a different level member attached to
the orifice surface, the different level member having a
surface at a different level than the orifice surface,
thereby forming a step between the orifice surface and the
5 surface of the different level member, the orifice surface
being formed with a row of nozzle orifices, the cleaning
device comprising:

an air flow generating unit formed with a suction hole
positioned at the nozzle orifice, the air flow generating
10 unit generating a spiraling current by sucking air into the
suction hole, the air flow generating unit sucking ink from
the nozzle orifice by drawing the ink in with the spiraling
current.

10. An inkjet recording device comprising:

15 an inkjet head including:

an orifice surface formed with a row of nozzle
orifices;

a different level member having a surface at a
different level than the orifice surface, the different
20 level member forming a step between the orifice surface and
the surface of the different level member; and

an ink ejection unit that ejects ink droplets
from each of the nozzle orifices; and

the cleaning device of claim 1.

25 11. The inkjet recording device as claimed in claim

10, further comprising a movement mechanism that moves the inkjet head between a recording position and a cleaning position, the different level member including a charge deflection electrode formed with an ink reception portion.

5 12. The inkjet recording device as claimed in claim 10, wherein the air flow generating unit sucks air in through the suction hole at asymmetrical flow velocity and flow rate about the row of nozzle orifices.

10 13. The inkjet recording device as claimed in claim 10, wherein the air flow generating unit includes:

 a suction hole member formed with the suction hole;
 a negative pressure generator that generates a negative pressure at the suction hole; and
 a positioning unit that positions the suction hole member at a suction position wherein the suction hole confronts the nozzle orifice and the different level member.

15 14. The inkjet recording device as claimed in claim 13, wherein a gap is formed between the suction hole member and at least one of the orifice surface and the different level member, the gap having a size that is asymmetric about the row of nozzle orifices.

20 15. The inkjet recording device as claimed in claim 14, further comprising a stage unit that moves the suction hole member following the row of nozzle orifices formed in the orifice surface.

16. The inkjet recording device as claimed in claim
13, wherein the suction hole member is formed with a
plurality of suction holes, the negative pressure generator
generates the negative pressure at at least two adjacent
5 ones of the plurality of suction holes at a time while
sequentially suctioning the plurality of suction holes.

17. The inkjet recording device as claimed in claim
13, wherein the suction hole member disposed at the suction
position deforms while pressing against the orifice surface
10 and the different level member without contacting the nozzle
orifice.

18. The inkjet recording device as claimed in claim
13, wherein the suction hole member disposed at the suction
position is distanced from the orifice surface without
15 contacting the orifice surface.

19. The inkjet recording device as claimed in claim
10, wherein the different level member is attached to the
orifice surface.